

"Manganese oxide shaped nanostructures for low temperature oxidation reactions"

The objective of the project is to develop syntheses of manganese IV oxide nanostructures, with well-defined shape and size. Among the selected morphologies are core-shell materials, nanorods, nanosheets, etc. The candidate, after a bibliographic survey, will be in charge of the material synthesis development and characterization of prepared materials. Characterization will be performed using conventional techniques such as XRD, MEB-TEM coupled or not with EDX spectroscopy, N<sub>2</sub> physisorption, TG-DSC... Advanced surface characterization of selected materials will also be performed using XPS - ToF SIMS - LEIS coupled analysis. The candidate will also be in charge of the evaluation of the material catalytic properties. The selected pollutant for the study is the formaldehyde (HCHO), a molecule widely encountered in indoor atmosphere.

Applicants should send a CV, and a short letter of introduction to:

Jean-Philippe Dacquin <jean-philippe.dacquin@univ-lille1.fr>

Jean-François Lamonier <jean-francois.lamonier@univ-lille1.fr>

UCCS UMR 8181 - Université de Lille 1